

What is claimed is:

1. A gateway system for voice communication of a communication system for performing communication among PSTN terminals connected to a 5 PSTN, IP terminals connected to an Internet protocol-based local area network (LAN) and remote terminals of a different area connected to the Internet; comprising:

a PSTN gateway for rendering the PSTN terminals and the IP terminals to communicate with each other; and

10 an inter-gateway for rendering IP terminals and the PSTN terminals through the PSTN gateway to communicate with the remote terminals through the Internet.

15 2. The gateway system according to claim 1, wherein the inter-gateway communicates with the remote terminals through a remote inter-gateway of a different area.

20 3. The gateway system according to claim 2, wherein the remote terminals are remote PSTN terminals connected to the PSTN connected to the remote inter-gateway and remote IP terminals connected to the LAN connected to the remote inter-gateway.

25 4. The gateway system according to claim 2, wherein the inter-gateway compresses each signal received from the terminals to transmit the compressed signals to the remote inter-gateway, and receives the compressed

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signals from the remote inter-gateway, uncompresses them to restore to their original signals and transmits them to corresponding terminals.

5. The gateway system according to claim 2, wherein the inter-gateway and the remote inter-gateway communicate with each other by a compressed voice signal packet.

6. The gateway system according to claim 1, wherein communication between the inter-gateway and the PSTN gateway and communication between 10 the inter-gateway and the PSTN terminal are made by voice packet.

7. The gateway system according to claim 1, wherein the PATN terminals and the IP terminals communicate with each other by a voice signal packet

15 8. The gateway system according to claim 1, wherein the inter-gateway includes a plurality of CODECs that receives each voice signal transmitted from the PSTN gateway and from the IP terminals to generate compressed voice signals and transmit them to the remote inter-gateway, and 20 receives compressed voice signals from the inter-gateway and uncompresses them.

9. A gateway system for voice communication comprising:
25 a PSTN terminal connected to a PSTN for communication;
an IP terminal connected to a local area network (LAN) for

communication;

a PSTN gateway for rendering the PSTN terminal and the IP terminal to communicate with each other; and

5 an inter-gateway for rendering the IP terminal and PSTN gateway to which the PSTN terminal is connected, to communicate with an IP terminal and a PSTN terminal of a different area through the Internet.

10 10. The gateway system according to claim 9, wherein the inter-gateway communicates with a remote inter-gateway of a different area

11. 15. The gateway system according to claim 10, wherein communication between the inter-gateways are made in a manner that a compressed packet signal is transmitted through the Internet and the compressed packet signal as received is uncompressed to thereby being restored to its original signal.

12. 20. The gateway system according to claim 9, wherein the inter-gateway communicates with the PSTN gateway or with the IP terminal by a voice packet.

13. 25. The gateway system according to claim 9, wherein the signal transmitted and received between the PSTN terminal and the IP terminal is a voice signal packet.

14. The gateway system according to claim 9, wherein the inter-

5 gateway includes a plurality of CODECs that compresses voice signals transmitted from the PSTN terminal and from the IP terminals to generate compressed voice signal, and uncompresses the compressed voice signals as transmitted from the Internet.

15. A method for controlling a gateway system for voice communication comprising the steps of:

10 connecting a first terminal connected with an Internet protocol-based LAN with a first inter-gateway (MGW1) that converts a protocol of the first terminal and connects it with the Internet;

15 connecting the first inter-gateway and a second inter-gateway as the first terminal is connected with the first inter-gateway and transmits an ID of the second gateway connected with the Internet;

20 transmitting an Internet phone number of a second terminal connected with the second inter-gateway by the first terminal as the first terminal and the first and the second inter-gateways are connected with each other, and receiving a call signal from the second terminal; and

25 performing voice communication between the first and the second terminals.

16. The method according to claim 9, wherein the terminals and the inter-gateways are communicated with each other by a voice packet

17. The method according to claim 9, wherein the inter-gateways are 25 communicated with each other

18. The method according to claim 9, wherein the step of performing voice communication comprising the sub-steps of:

compressing a voice signal transmitted from the terminals and transmitting the compressed voice signal to the Internet; and

5 uncompressed the compressed voice signal as transmitted from the Internet and transmitting the uncompressed voice to the terminals.